

Montana Driver Education and Training



Strategies for Adverse Conditions



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Standards and Benchmarks



1. Laws and Highway System

- a. know the laws outlined in the Montana Driver's manual
- b. understand the laws outlined in the Montana Driver's manual
- c. consistently demonstrate knowledge and understanding by responsible adherence to highway transportation system traffic laws and control devices

2. Responsibility

- b. demonstrate the ability to make appropriate decisions while operating a motor vehicle
- c. consistently display respect for other users of the highway transportation system
- d. develop habits and attitudes with regard to responsible driving

3. Visual Skills

- a. know proper visual skills for operating a motor vehicle
- b. communicate and explain proper visual skills for operating a motor vehicle
- c. demonstrate the use of proper visual skills for operating a motor vehicle
- d. develop habits and attitudes with regard to proper visual skills

4. Vehicle Control

- a. demonstrate smooth, safe and efficient operation of a motor vehicle
- b. develop habits and attitudes relative to safe, efficient and smooth vehicle operation.



Standards and Benchmarks



5. Communication

- a. consistently communicate their driving intentions (i.e., use of lights, vehicle and personal signals)
- b. adjust their driver behavior based on observation of highway transportation system and other users
- c. adjust communication (i.e., use of lights, vehicle and personal signals) based on observation of highway transportation system and other users
- d. develop habits and attitudes relative to effective communication

6. Risk Management

- a. understand driver risk-management principles
- b. demonstrate driver risk-management strategies
- c. develop driver risk-management habits and attitudes

7. Lifelong Learning

- a. understand past, present and future vehicle and roadway design, and driving cultures
- c. understand benefits of a lifelong learning approach to driving
- e. identify opportunities for lifelong education in driving

8. Driving Experience

- a. acquire at least the minimum number of BTW hours over at least the minimum number of days, as required by law, with a Montana approved driver education instructor
- b. be encouraged to acquire additional BTW driving experience with their parent or guardian's assistance in a variety of driving situations (i.e., night, adverse weather, gravel road, etc.).



ADVERSE DRIVING CONDITIONS



- Driving conditions are not always perfect—consequently, drivers must be prepared for all types of driving conditions
- Limitations placed on vision, motion, and steering control can be reduced with reduced-risk driving habits



REDUCED VISIBILITY DRIVING CONDITIONS



- About 90 percent of driving choices are based on what the driver sees
- If a hazard isn't seen, drivers can quickly drive into dangerous conditions



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OVER-DRIVING HEADLIGHTS



- Most high-beam headlights (if properly maintained) shine no more than 450 feet ahead
- Over-driving headlights occurs when a driver is traveling at a speed that prevents stopping safely within the distance covered by the headlights



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VEHICLE LIGHTS FOR VISIBILITY

Montana Laws



All vehicles must have two **red taillights** that can be seen for 500 feet

Low beams must show vehicles and people at 100 feet ahead

Headlights on a half hour after sunset until a half hour before sunrise or whenever visibility can't be seen at 500 feet or less

Brake lights must be RED or AMBER and be visible 100 feet in sunlight

Lights must be dimmed when oncoming vehicles are within 1,000 feet and 500 feet of overtaking a vehicle

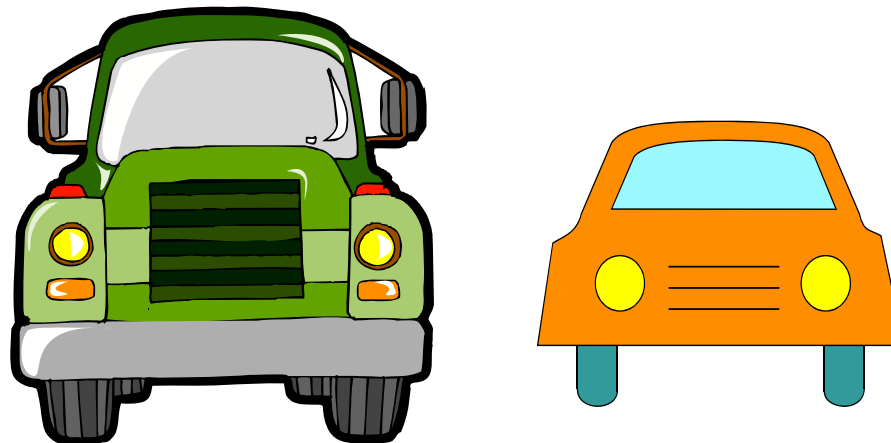
High beams must show vehicles and people at 350 feet ahead



HEADLIGHT HEIGHT



- Federal safety standards require headlights not exceed 54 inches in height
- Many larger vehicles such as SUVs and light trucks have headlights almost nine inches higher than cars
- Drivers are blinded by lights reflecting off the rearview mirror and shining directly into their eyes from the vehicle behind



ALIGNING HEADLIGHTS



- Headlights need to be aligned correctly to see the road better and help other drivers avoid glare
- If pointed as little as one degree too high, lights can affect oncoming drivers
- Miss-aimed beams also don't show needed light on the road



HEADLIGHT MAINTENANCE



- Occasionally drivers may be seen driving with only one headlight working
- This can create risk to the vehicle's occupants and other road users
- A simple check of all lights can improve safety for everyone



**Replace broken headlights immediately
Keep them clean**



HIGH-TECH HEADLIGHTS



- A new type of headlight is becoming more common—High Intensity Discharge (HID) lights
- HID lights emit twice the light of regular halogen headlamps
- They produce a blue-white light—other headlights look yellow
- They are more expensive than halogen lights



SOURCES OF GLARE



- Glare reduces the distance where drivers can identify pedestrians and/or vehicles and can be severe enough to cause drivers to be unable to see small changes in brightness



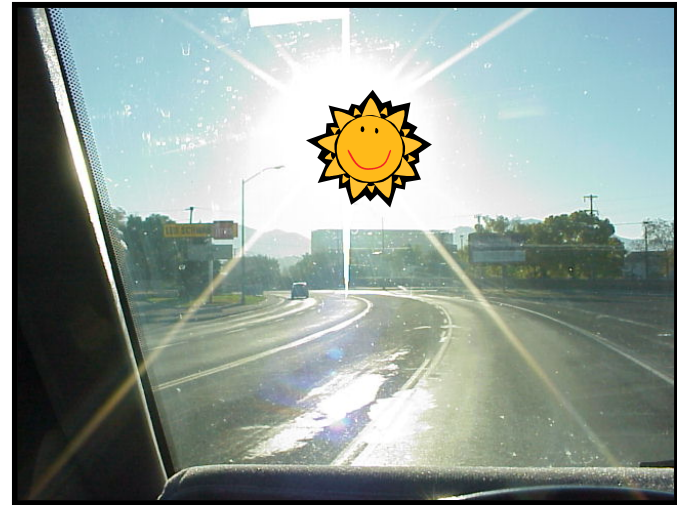
Eyes must adjust to the glare and for some drivers glare recovery can take a long time; a lot of distance can be covered quickly depending upon speed



SOURCES OF GLARE



- Bright sun
- Unshielded street lights
- Bright advertising signs
- Weather conditions
- Improperly adjusted headlights
- Illegal high-wattage bulbs in non-compliant aftermarket products
- As seasons change, the angle of the rising and setting sun causes more glare, whether driving into or away from the sun



PROTECTION FROM GLARE



Inside the Vehicle

- Adjust the vehicle's interior lighting for protection from glare
- If street lights cause a lot of glare, dim the dashboard lights and use the sun visor
- Avoid using any other light inside the vehicle



AVERT EYES



- To protect from bright headlights, look to the right and use the painted "fog line" or edge of the road as a reference
- Keep an eye on the approaching vehicle out of the left corner of the field of vision



Photo courtesy of the AAA Foundation



MIRROR DAY/NIGHT SETTINGS



- Develop the habit of easily changing the mirror to the “night” setting by flipping the small lever at the bottom of the mirror
- This changes the angle of the reflective surface and the lights will appear dimmer and less distracting



BGE MIRROR SETTINGS



**The Blind Zone Glare Elimination
(BGE) enhanced side mirror settings
(15 degrees to the outside) eliminates
right and left side mirror blind areas**



SELF-DIMMING MIRRORS



- Many newer vehicles offer self-dimming mirrors
- These mirrors are also available as an after-market option
- As the glare becomes brighter, the mirrors become darker



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ANTI-REFLECTIVE EYE GLASSES



- Drivers who must wear eye glasses can have their glasses coated with an anti-reflective coating
- The coating actually transmits more light (about 8 percent more) and improves vision both day and night



IMPROVE VISIBILITY FROM THE VEHICLE



- Drivers can take steps to help improve driving visibility during extreme weather
- Keep the headlights clean
- Road grime can reduce light effectiveness by 90 percent and dangerously reduce the ability to see at night



Photo courtesy of the AAA Foundation



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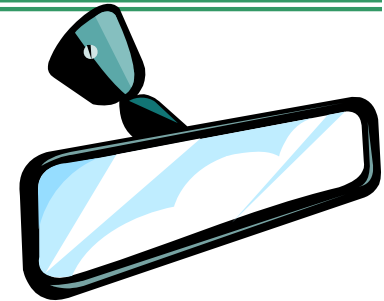


Clean Headlights, Windows

PROTECT THE EYES



- Glare and low-light driving can create eye fatigue
- Keep good ventilation inside the vehicle
- Take frequent breaks to rest the eyes
- Scratched eyeglasses or contact lenses also make glare worse
- Wear quality sunglasses during the day with polarized lenses and UV protection to help reduce glare
- Lower the sun visor by pushing it all the way forward, then pulling it back to the proper position
- Wear a hat with a brim



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DRIVING AT NIGHT



- Darkness impairs vision causing an increase in reaction time
- Darkness also makes it more difficult to judge other vehicles' speed

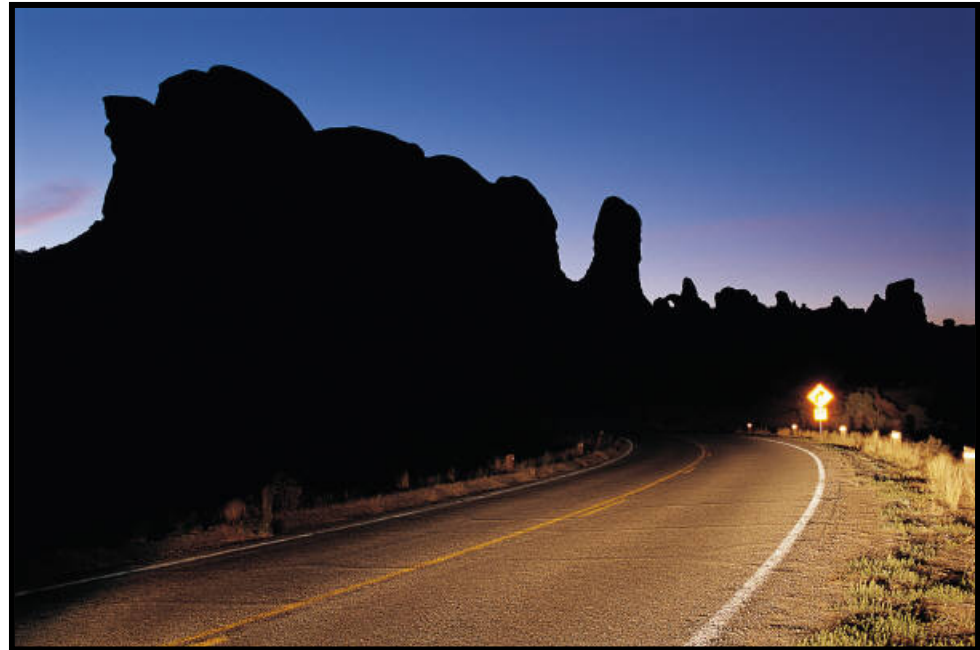


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REDUCED-RISK DRIVING HABITS



- Ask passengers to help search into hills and curves, and look for animals
- Keep the eyes moving while looking for potential hazards
- This helps avoid highway hypnosis
- Use high beams whenever possible
- Never use high beams because the oncoming drivers have neglected to change to low beams—it increases the chance of a head-on collision
- Increase following distance to four- to five-seconds at a minimum
- Reduce speed; drive within the headlight's projection
- Be able to stop within the range of the headlight projection
- Some states require reduced speeds at night
- Be aware that drunk driving increases at night--drive alert and be aware



DRIVING IN FOG



- Driving in fog is like driving in a cloud at ground level
- Fog and mist are both made of tiny water droplets suspended in air—the difference between them is the density
- Fog is denser and contains more water droplets than mist



DRIVING IN FOG



- Fog can be patchy, going from a light mist to a thick blanket in an instant
- Fog can reduce visibility to one-fourth mile or less, creating hazardous driving conditions



Photo courtesy of the AAA Foundation

Statistically fog is the most dangerous driving hazard in existence



REDUCED RISK DRIVING HABITS IN FOG



- On foggy days, the safest solution is to move well off the road and wait for the fog to lift
- Drive with lights on low beam—high beams reflect off the fog
- Don't rely on parking lights—they provide little visibility
- Use windshield wipers and defrosters as necessary
- Use the right edge of the road or painted fog line as a guide
- Slow down and be patient—do not pass lines of traffic



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Photo courtesy of the AAA Foundation

REDUCED RISK DRIVING HABITS IN FOG



- Reduce speed - studies show that some drivers acclimate themselves to foggy conditions and unconsciously increase their speed over time
- Listen for traffic that can't be seen



Photo courtesy of the AAA Foundation



REDUCED RISK DRIVING HABITS IN FOG



- Do not stop on a freeway or heavily traveled road
- If the car stalls or becomes disabled, turn the vehicle's lights off and take the foot off of the brake pedal
- If unable to continue, pull well onto the shoulder, getting the vehicle completely off the road
- People tend to follow taillights when driving in fog—move away from the parked vehicle to avoid injury



Photo courtesy of the AAA Foundation



REDUCED RISK DRIVING HABITS IN FOG



- If the vehicle is equipped with fog lights, use them
- Avoid stopping in the middle of the road—it's a guarantee of a rear-end collision
- Remember that other drivers also have limited vision control, signal early and tap brakes lightly when slowing to stop
- Be aware fog can leave the roadways slick, traction will be reduced



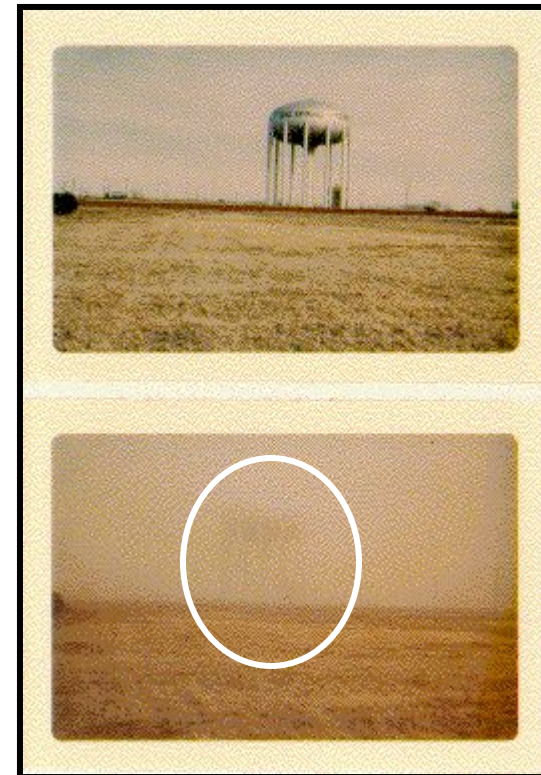
Photo courtesy of the AAA Foundation



DRIVING IN SMOKE AND DUST



- Smoke can be caused by forest fires, buildings on fire, preparing farmland or by accidental brush fires
- Dust can be caused by wind in dry desert areas or in agricultural areas
- Do not drive through areas with severely reduced visibility—conditions can change quickly and increase in intensity



REDUCED RISK DRIVING HABITS IN DUST AND SMOKE



- Identify clouds of dust or smoke
- Turn on the windshield wipers if needed
- Close windows
- If visibility is severely reduced, move off the road as far as possible and wait for conditions to improve before continuing on



Photo courtesy of the AAA Foundation



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DRIVING IN LIGHTNING



- People are in danger from lightning if thunder can be heard
- Because light travels much faster than sound, lightning flashes can be seen long before the resulting thunder is heard



DRIVING IN LIGHTNING



- Knowing how far away a storm is does not mean there is danger only when the storm is overhead



DRIVING IN LIGHTNING



- Estimate the number of miles from a thunderstorm by counting the number of seconds between a flash of lightning and the next clap of thunder
- Divide this number by five to determine how far away the storm is

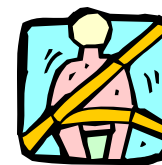


How far away is the storm?

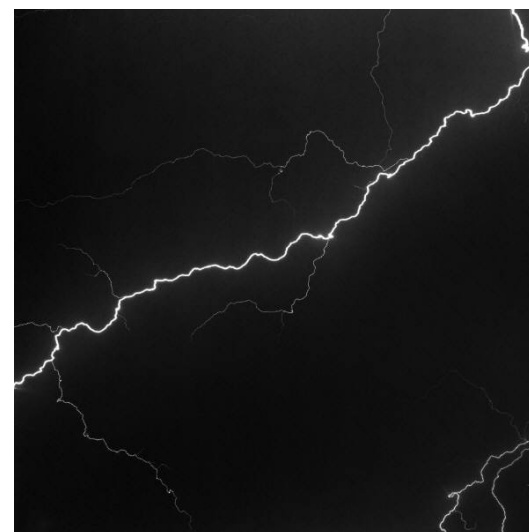


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REDUCED RISK DRIVING HABITS IN LIGHTNING



- Pull safely onto the shoulder of the road away from any trees and electrical wires that could fall on the vehicle
- Turn on your emergency flashers
- Avoid blocking underpasses
- To avoid being shocked, do not touch metal objects or conducting surfaces inside or outside the car



REDUCED RISK DRIVING HABITS IN LIGHTNING



- Lightning can travel through wet ground to the car
- While the steel frame of a hard-topped vehicle increases protection if passengers are not touching metal, rubber tires do not provide protection from lightning
- Although passengers may be injured if lightning strikes the car, passengers are much safer inside a vehicle than outside



DRIVING IN RAIN



- Wet roads can be as dangerous as icy roads
- Roads are more dangerous at the start of a light rain when road oil and water mix to form a greasy film on the road



Photo courtesy of the AAA Foundation



DRIVING IN RAIN



- Always reduce speed in wet weather—more distance is needed for stopping—turning may result in a skid



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HYDROPLANING



- Tires may lose all contact with the wet road and start to “hydroplane” or ride on top of a film of water like a set of water skis
- When that happens, drivers can’t brake, accelerate, or turn
- A gust of wind, a curve or even a lane change can cause a skid



Photo courtesy of the AAA Foundation



Reduced Risk Driving Habits in Rain



To reduce the chance of hydroplaning

- Slow down during rainstorms or when roads are slushy
- Slow down if the road has standing water or puddles
- Replace tires as soon as they become worn
- Keep tires properly inflated



Photo courtesy of the AAA Foundation



Reduced Risk Driving Habits in Rain



If driving over a slippery area where a car has started to hydroplane

- **Maintain a steady speed and look and steer to the target**
- **Slowly take the foot off the gas pedal**
- **Don't try to stop or turn quickly until the tires are gripping the road again**
- **If the vehicle is not equipped with ABS brakes, pump brakes gently**



Photo courtesy of the AAA Foundation

